ABSTRACT

A method for reconstruction of object attenuation density $(S(x,y,z))$ from X-ray projection image data values $(V(p_q))$ comprises the steps of: representing (11) the object attenuation density by a sum of predetermined continuous harmonics $(H_{ijk}(x,y,z))$ with unknown coefficients (a_{ijk}); relating (12) each of the projection image data values to an integral $(S(p_q))$ of the object attenuation density, and thus to a corresponding sum of sums $(a_{ijk}*H_{ijk}(p_q))$ of the predetermined continuous harmonics with unknown coefficients; determining (13) the unknown coefficients (a_{ijk}) from the above relation; and reconstructing (14) the object attenuation density by said sum of predetermined continuous harmonics with said determined coefficients. The spatial three-dimensional object attenuation density is found as a continuous function with uniform resolution over all its volume and is shown as a solid three-dimensional body, which can be cut in arbitrary way and shown in continuous motion.